

REMARKS

(1) Applicant amends the specification herein to correct typographical errors where the units "µm" were used regarding the diameter of wafers, which clearly should have been in units of "mm," as will be apparent to one of ordinary skill in the art. No new matter was added by these amendments to the specification.

(2) Claims 1-10 and 21-32 are pending in the present application. Applicant cancelled claims 11-20 herein. Applicant added new claims 21-32 herein, but no new matter has been added.

(3) The Office Action cited the following references:

A. U.S. Patent 5,930,670, by Park, entitled *Method of Forming a Tungsten Plug of a Semiconductor Device* (referred to as "Park" hereinafter);

B. U.S. Patent 6,610,597, by Kobayashi, entitled *Method of Fabricating a Semiconductor Device* (referred to as "Kobayashi" hereinafter); and

C. U.S. Published Patent Application 2003/0091870 A1, by Bhowmik et al., entitled *Method of Forming a Liner for Tungsten Plugs* (referred to as "Bhowmik" hereinafter).

(4) Claims 1-3, 5, and 6 have been rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by Park. Applicant respectfully traverses these rejections for the following reasons.

Park does not disclose, teach, suggest, or motivate a method of reducing circuit failures caused by tungsten plug pulling out, where the method includes the steps of polishing the tungsten layer to remove a top portion of the tungsten layer, and stopping the polishing so as to leave a reduced thickness of the tungsten layer, as claim 1 requires. Because Park does not disclose these aspects required by claim 1, Park cannot anticipate the invention of claim 1.

Because claims 2, 3, 5, and 6 depend from claim 1, Applicant respectfully submits that claims 2, 3, 5, and 6 are patentable over Park because of their dependency from independent claim 1 for the reasons discussed above. Thus, Applicant respectfully asserts that claims 1-3, 5, and 6 are patentable over Park.

(5) Claims 4 and 7-9 were rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Park in view of Kobayashi. Claim 10 was rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Park in view of Bhowmik. Applicant respectfully traverses these rejections for the following reasons.

Claims 4 and 7-10 depend from independent claim 1. The cited references do not disclose, teach, suggest, or motivate a method of reducing circuit failures caused by tungsten plug pulling out, where the method includes the steps of polishing the tungsten layer to remove a top portion of the tungsten layer, and stopping the polishing so as to leave a reduced thickness of the tungsten layer, as claim 1 requires. Because none of the references teach the claimed invention of claim 1, combinations of these references cannot teach the claimed invention. Accordingly, Applicant respectfully asserts that independent claim 1 is patentable over the cited references.

Because claims 4 and 7-10 depend from claim 1, Applicant respectfully submits that claims 4 and 7-10 are patentable over the cited references because of their dependency from independent claim 1 for the reasons discussed above.

(6) Applicant added new claims 21-32 herein. Applicant respectfully asserts that claims 21-32 are patentable over the cited references based on the following.

Claims 21-26

Claim 21 is an independent claim and claims 22-26 depend therefrom. The cited references do not disclose, teach, suggest, or motivate a method of reducing integrated circuit failures in an integrated circuit chip caused by metal plug pull-ups and pull-outs while making the chip, where the method includes polishing the metal layer to remove a top portion of the metal layer, and stopping the polishing to leave a reduced thickness portion of the metal layer adjacent to the aperture, as claim 21 requires. Because none of the references teach the claimed

invention of claim 21, combinations of these references cannot teach the claimed invention. Accordingly, Applicant respectfully asserts that independent claim 21 is patentable over the cited references.

Because claims 22-26 depend from claim 21, Applicant respectfully submits that claims 22-26 are patentable over the cited references because of their dependency from independent claim 21 for the reasons discussed above.

Claims 27-32

Claim 27 is an independent claim and claims 28-32 depend therefrom. The cited references do not disclose, teach, suggest, or motivate a method of making an integrated circuit chip, where the method includes: polishing the metal layer to remove a top portion of the metal layer, stopping the polishing to leave a reduced thickness portion of the metal layer adjacent to the aperture, forming a contact pad at least partially over the metal filled aperture, and removing at least part of the reduced thickness portion of the metal layer during the forming of the contact pad, as claim 27 requires. Because none of the references teach the claimed invention of claim 27, combinations of these references cannot teach the claimed invention. Accordingly, Applicant respectfully asserts that independent claim 27 is patentable over the cited references.

Because claims 28-32 depend from claim 27, Applicant respectfully submits that claims 28-32 are patentable over the cited references because of their dependency from independent claim 27 for the reasons discussed above.

(7) In view of the above, Applicant respectfully submits that the application is in condition for allowance and requests that the case be passed to issuance. If the Examiner should have any questions, Applicant requests that the Examiner contact Applicant's attorney at the address below. The total number of claims increased by two. Hence, please charge the fee of \$36 (2 x \$18 = \$36) to Deposit Account No. 50-1065. In the event that there are any other fees due herein to keep the application pending, other than an issue fee, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

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Date

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